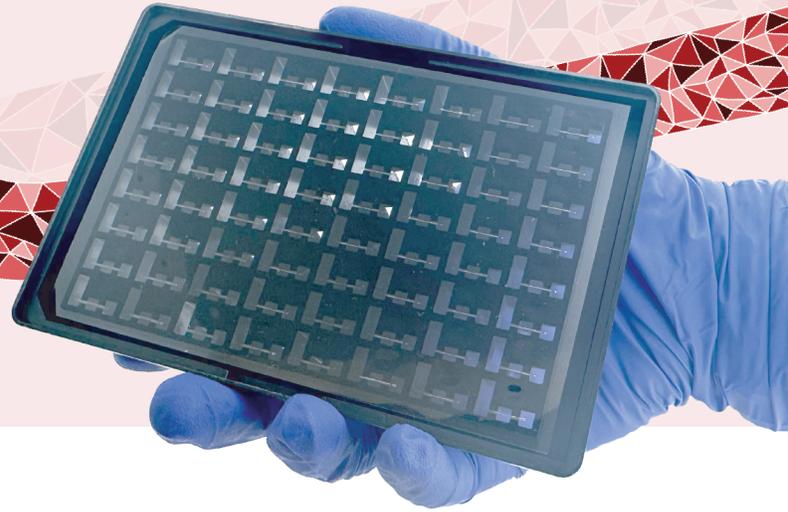


UniPlate384™



UniPlate is an organ-on-a-chip platform designed to replicate the complex structure and function of human tissues under uni-directional media perfusion. Each UniPlate contains 64 independent tissue culture units, and is compatible with automation workflows. Each unit contains an inlet, middle, and outlet well connected together via two channels as well as a slanted ramp for media recirculation. The middle well contains a 3D-printed sacrificial template that can be encapsulated by a natural hydrogel. Upon dissolving the templates, the system produces a perfusable structure within the hydrogel matrix, which can then be populated with cells. The absence of membranes between the perfusable structure and surrounding matrix enables direct interactions between cells to mimic physiological tissue environments.

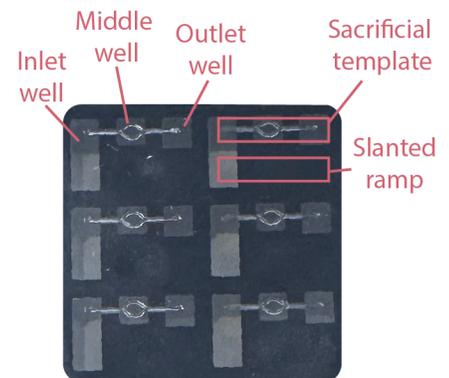
This versatile platform supports the creation of various tissue models, including tubular blood vessels, bifurcating vascular networks, renal epithelial tubules, colon tubes, and vascularized spheroids or organoids. These models can be used to study tissue barrier disruption, immune response, fibrosis and more in a highly controlled environment.

KEY FEATURES

- 64 tissue culture units
- Pump-free uni-directional perfusion
- Long-term recirculation of immune cells
- Membrane-free 3D tissue culture in hydrogel matrix
- Customizable tissue architecture
- Automation compatible

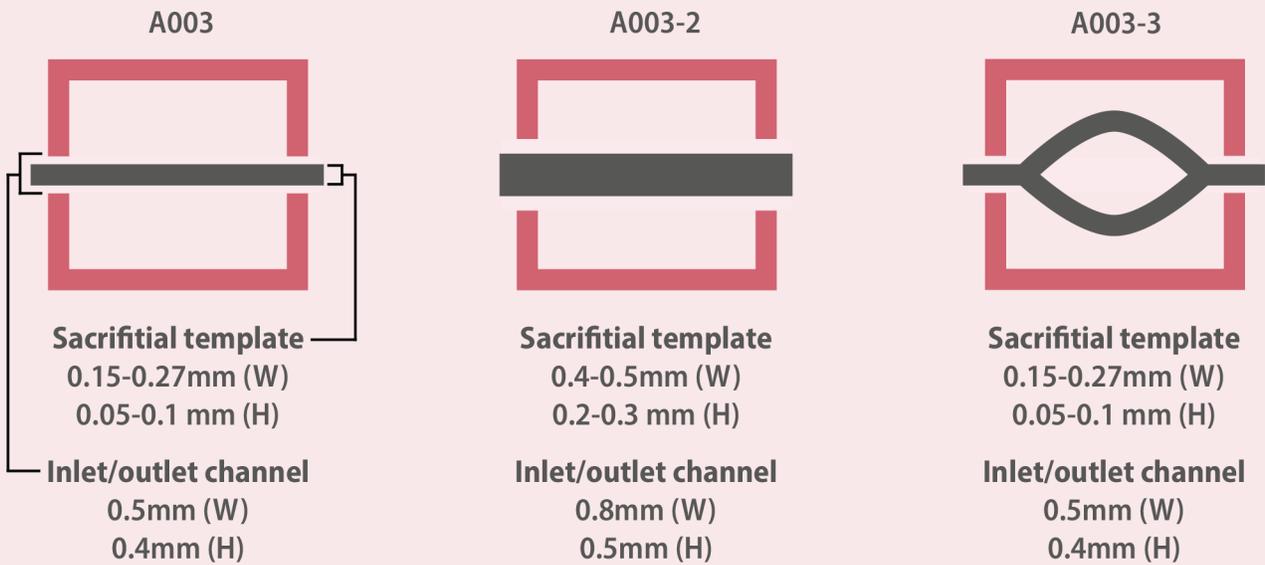
With customizable designs, including three standard templates and the option for tailored configurations, the UniPlate offers unparalleled flexibility for diverse research needs.

The UniPlate is specially designed to provide gravity-driven uni-directional perfusion of tissues when used in combination with the *IFlowRocker*, eliminating the need for pumps. The UniPlate is also compatible with the *AngioTEER* sensor, enabling real-time, continuous monitoring of tissue barrier integrity across 64 tissue units in a plate. The open-well design ensures easy access for pipetting and tissue removal for downstream analysis, while the optically clear plate bottom supports high-content imaging using confocal microscopy and high-throughput analysis with plate readers. The 384-well design also minimizes the use of cells and reagents to significantly reduce experimental costs per data point. To learn more, please visit www.organo-biotech.com/posters.



Bottom view of the plate

Customizable tissue architecture



Specifications

Product code	A003; A003-2; A003-3
Number of culture per plate	64
Sterilization method	UV sterilized
Storage condition	Room temperature (15-25 °C)
Storage time	3 month
Plate format	SBS standard 384 well plate
Materials	Top plate: virgin polystyrene. Bottom plate: optical quality, low compound-absorbing plastic Internal sacrificial template: proprietary polymers
Perfusion	Gravity driven perfusion with IFlowRocker (B001)
Applications	Perfused 3D tissue and organoid culture
Readouts	Sensor (TEER with AngioTEER, B002); Imaging (phase contrast, widefield fluorescence, confocal) ; plate reader (absorption, fluorescence, luminescence) ; off plate (Histology, ELISA, RNA/DNA analysis, MS, biochemistry)